PROJECT NUMBER: 1005
PROJECT TITLE: Semiworks Operations Support
PROJECT LEADER: E. G. Craze
PERIOD COVERED: July, 1987

I. ENGINEERING DEVELOPMENT (D. E. Albertson)

A. Objective: Provide engineering and technical support to improve the performance and efficiency of the Semiworks operation.

B. Results:

Tobacco Lot Analysis (Skidmore/Nguyen) - Modifications to the Labcutter that made the unit self feeding were completed in July. This results in a significant improvement in the repeatability of the TLA primary process. A series of tests is being conducted to determine the optimum cutting conditions.

A test program is underway to determine the standard deviations for sample dependent, non-controllable, variables such as sieve sizes and CV for filler processed in the TLA primary. This information will be used to define the variations in parameters from a given tobacco grade lot.

ES Feeder Performance (Nguyen) - The Semiworks ES feeder has been redesigned to improve the performance of the ES addition system. The new feeder is being fabricated by Rayco and is scheduled to be installed beginning August 12, 1987.

Make/Pack (Albertson) - Installation of the first of four new MAX-S tippers has been initiated. Each unit is expected to take approximately three weeks to install with work continuing sequentially until all units have been installed.

The new high speed ring tipper was received from Hauni of Richmond and successfully run on a POL test. This unit is expected to improve product quality while reducing sample processing time.

C. Plans: Develop a primary processing system for the Tobacco Lot Analysis Program and establish firm acceptance criteria for the TLA process.

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II. PROCESS CONTROL (D. A. Phan)

A. **Objective**: Evaluate and revise the Semiworks process control and data acquisition systems to improve processing performance and production quality.

B. **Results**:

Flavor Cylinder Priming (Oliver) - An automatic priming system has been implemented on the bright casing cylinder for improved flavor application during start-up. This completes the installation of automatic priming systems on all flavor cylinders in the Semiworks.

Flavor System Upgrade (Phan) - The design of the improved flavor system for the burley spray cylinder is complete. A new 100-gallon burley storage tank has been received and installation is planned for the week of August 24.

Optical Detection System (Oliver) - The modicon software has been revised to accomodate provisions for routing tobacco from both the 3,000 and 6,000-lb lines through the detection system for removal of foreign material in the preblend area. Construction work will begin August 14 and is scheduled to be complete by August 22.

Vacuum Conditioner Upgrade (Oliver/Sims) - work is continuing to provide identification tags on all of the equipment associated with the vacuum conditioning system to enhance operation and maintenance. In addition, existing drawings and control loops are being verified to assure the system is performing as designed.

Instrument Evaluations (Sims/Coleman) - Testing of the Bearingless volumetric flowmeter for use in applying aftercut flavors has been completed. The data are being evaluated and a final report is being prepared.

Testing of the Computrac moisture analyzer for use in determining moisture levels for filler release in the Semiworks primary is progressing. Preliminary results look promising and the evaluation is expected to be completed by October, 1987.

C. **Plans**: Complete the checkout of the revised burley spray flavor system and the electrical interlocks for the optical detection system. Continue the evaluation of new instrumentation and conduct routine QA functions.

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